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उत्पाद मैनुअल

Copper strip for electrical purposes

IS 1897:2008 के अनुसार

PRODUCT MANUAL

FOR Copper strip for electrical purposes

ACCORDING TO IS 1897:2008

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो) अनुरूपता मूल्यांकन (विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

1.	मानक संख्या IS No.	:	IS 1897: 2008
	शीर्षक Title	:	Copper strip for electrical purposes
	संशोधनों की संख्या No. of amendments	:	0
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific raw material requirement Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer Annex - A

c)	नमूने का परिमाण Sample Quantity	: 6 m length (full width) for physical tests 5 pcs of 5 cm x 5 cm size for chemical tests Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market)
3.	परीक्षण उपकरणों की सूची List of Test Equipment	: Please refer to Annex-B
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	: Please refer to Annex- C
5.	एक दिन में संभावित परीक्षण Possible tests in a day	
	All tests Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.	
6.	लाइसेंस का दायरा /Scope of the Licence:	
	“Licence is granted to use Standard Mark as per IS 1897:2008 with the following scope: IS 1897:2008 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेंस निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है	
	Name of the product उत्पाद का नाम	Copper strip for electrical purposes
	Condition	O/HB/HD
	Sizes (thickness)	.. mm up to and including .. mm
	Additional requirements (optional)	With/Without controlled proof resistance (designations i.e. CPR1, CPR2, CPR3 to be mentioned if with controlled roof resistance)

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9, BAHADUR SHAH ZAFAR MARG,
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ANNEX-A
GROUPING GUIDELINES

The following grouping guidelines shall apply for Grant of Licence (GoL)/Change in Scope of Licence (CSoL):

Group	Sizes (thickness in mm)	Condition of Supply/Temper
A	0.15 up to and including 1.80	O or HB
B	Above 1.80 up to and including 6.00	O or HB
C	0.15 up to and including 6.00	HD

One sample of each condition of supply/temper (O/HB/HD) and the lowest size (thickness) shall be tested from each group to cover the range of sizes within that group.

In case controlled proof resistance (optional) is intended to be covered in the scope of licence, samples shall also be subjected to the test for controlled proof resistance. In this case, samples of each designation i.e. CPR1, CPR2, CPR3 intended to be covered, shall be tested.

Scope of licence shall be restricted based on the manufacturing and testing facilities available.

During operation of licence, samples of each variety covered in the scope of licence, shall be tested in rotation, to the extent possible.

ANNEX – B

LIST OF TEST EQUIPMENTS (INDICATIVE LIST, FOR GUIDANCE ONLY)

Major test equipment required to test as per the Indian Standard

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1	Chemical Composition, Cl. 6	Instrumental methods Instruments such as Optical emission spectrometer, Milling machine, Sulphur analyser, Oxygen analyser Chemical Methods Platinum electrode apparatus for electrolytic method and other laboratory equipment/reagents as per methods specified in IS 440
2	Tensile Strength and Elongation, Cl. 8.1	Universal Tensile Testing Machine, Extensometer
3	Hardness, Cl. 8.1	Vickers hardness tester
4	Bend test, Cl. 8.2	Universal Tensile Testing Machine, Mandrels of required sizes
5	Edgewise bending, Cl. 8.3	Universal Tensile Testing Machine, Mandrels (formers) of required sizes
6	Electrical resistivity test, Cl. 9	Kelvin double bridge or potentiometer, eddy current probe
7	Dimensions, Cl. 11	Vernier calipers, micrometers, straight edge, radius gauges

ANNEX C

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: For the purpose of this scheme, entire quantity of material of the same width and thickness and condition of supply manufactured from the same consignment of raw material under similar conditions on the same production line in one go shall be taken as one control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each package provided always that the material so marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

4 REJECTION - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1
(ONLY FOR GUIDANCE PURPOSE)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or)S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods Clause Reference			No. of Sample	Frequency	Remarks
6	Chemical composition (except oxygen)	----	IS 440/any other established chemical or instrumental method	R	One	Each control unit	---
6	Oxygen	-----	IS 440/any other established chemical or instrumental method	S	One	Each Control Unit	----
7	Freedom from defects	7	IS 1897	R	Manufacturer shall maintain adequate inspection/in process controls to ensure that the material remains free from harmful defects		
8.1	Tensile Strength and Elongation		IS 1608 (Part 1)	R	One	Each control unit	
8.1	Hardness		IS 1501 (Part 1)	R	One	Each control unit	

8.2	Bend test		IS 1599	R	One	Each control unit	
8.3	Edgewise bending	8.3	IS 1897	R	One	Each control unit	
9	Electrical resistivity test		IS 3635	R	One	Each control unit	
10	Test for controlled proof resistance (optional)	10	IS 1897	S	As agreed between purchaser and manufacturer		
11	Dimensions						
11.1	Width and thickness		IS 3052	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
11.2	Radius of curvature on edges or corner of strip	11.2	IS 1897	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
11.3	Straightness	11.3	IS 1897	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		

**ANNEXURE I
TEST CERTIFICATE**

FORMAT

XYZ COPPER COMPANY

TEST CERTIFICATE FOR COPPER STRIPS FOR ELECTRICAL PURPOSES

TEST CERTIFICATE NO. _____ DATED _____
TO M/s _____

It is certified that the material described below fully conforms to IS 1897:2008. Chemical, physical and electrical properties of the product, as tested in accordance with the Scheme of Inspection and Testing contained in the BIS Certification Marks Licence No. CM/L _____ are as indicated below against each order no. etc. (PLEASE REFER TO IS 613 : 2000 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order Numb er and date	Quantit y in tonnes	Lot No and date of mfg	Condition (O/HB/HD)	Thickn ess, Width	Grade and Chemical analysis (in %)	Mechanical properties	Electrical Resistivity (ohm mm ² /mat 20°C) and Conductivit y(IACS)	Freedo m from defects	Edgewi se Bendin g #	Controll ed Proof Resista nce (Option al)
					Grade Cu-ETP/Cu-FRHC Cu+Ag – Bi – Pb- O2- Impurities-	TS (Mpa) EL% HV Bend				

when agreed between purchaser and
manufactuer

The material supplied conforms to specified
tolerances

REMARKS
SHIPPING ADVICE
NO.WAGON NO.

“For details of BIS certification please visit www.bis.gov.in”

FOR XYZ COPPER COMPANY